

CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society
Of America

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FIG. 127—*Agave attenuata* is a beautiful plant for accent in landscaping. See pg. 131.



CACTUS AND SUCCULENT JOURNAL

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Mr. Stanley C. Dedman, The Library Flat, 18 High Street, Godalming, Surrey, England, would like to correspond with other English members who are growing plants under diverse conditions.

Before subscribing to your magazine I had little interest in the other succulents but after reading the interesting article on the Gardens in the San Francisco Bay Area I am convinced I should try some. Roberta Watkins, Washington, D.C.

"Don't you dare let me miss a single issue of your Journal." Mrs. Thelma Muff, Ontario, Cal.

Mrs. Dallas Bierman, an amateur collector, would like to communicate with other members living near Chesterland, Ohio, Mayfield Rd. Rt. 1.



FIG. 128

Entering the main driveway a beautiful planting is seen, both sides extending for approximately 350 feet being planted with *Agave attenuata* with a ground cover of *Sedum pachyphyllum*. About 2000 plants of this *Agave* were used. In the background are taller specimens of tree *Aloes* and what is commonly called *Dracaena indivisa* but probably is more correctly *Cordyline australis*.

A TRIP TO "LOTUS-LAND"

By J. R. BROWN AND SCOTT HASELTON

Photos by authors

A recent trip to Mme. Ganna Walska's estate, "Lotusland", in Santa Barbara, California, revealed so many scenes of unusual interest that we decided to share them with our JOURNAL readers. This is a picture travelogue to convey what words fail to do.

Santa Barbara is situated on the coast about half way between the Mexican border and San Francisco. The mild climate and the ocean fogs protect the area from full days of burning sun and from freezes in winter. A study of the pictures show the wide range of cacti and the other succulents that can be grown out of doors without protection in this area.

Mme. Walska keeps in mind a mass effect, not a straggling plant here and there, but the largest and most mature plants she can obtain are arranged in one of the finest landscaped estates in the country.

A planting of this kind requires an understanding of the needs of the plants. Some like the heat and warmth projected from the stucco walls of the house. Others need the protection by partial shade while some thrive in heavy shade with ferns and rain forest plants. Some are being constantly moved until they find the spot best suited to them.

With the experience of Ralph Stevens, the well known landscape architect of Santa Barbara, who has seen this estate develop since childhood, "Lotusland" is a show place that is generously shared with organizations that appreciate the beauty that has been created. Seeing the garden, the casual visitor cannot appreciate all the work and losses that have been experienced to attain this perfection. Of course plants have died—always the finest specimens, and replacements are being constantly made to maintain its beauty.

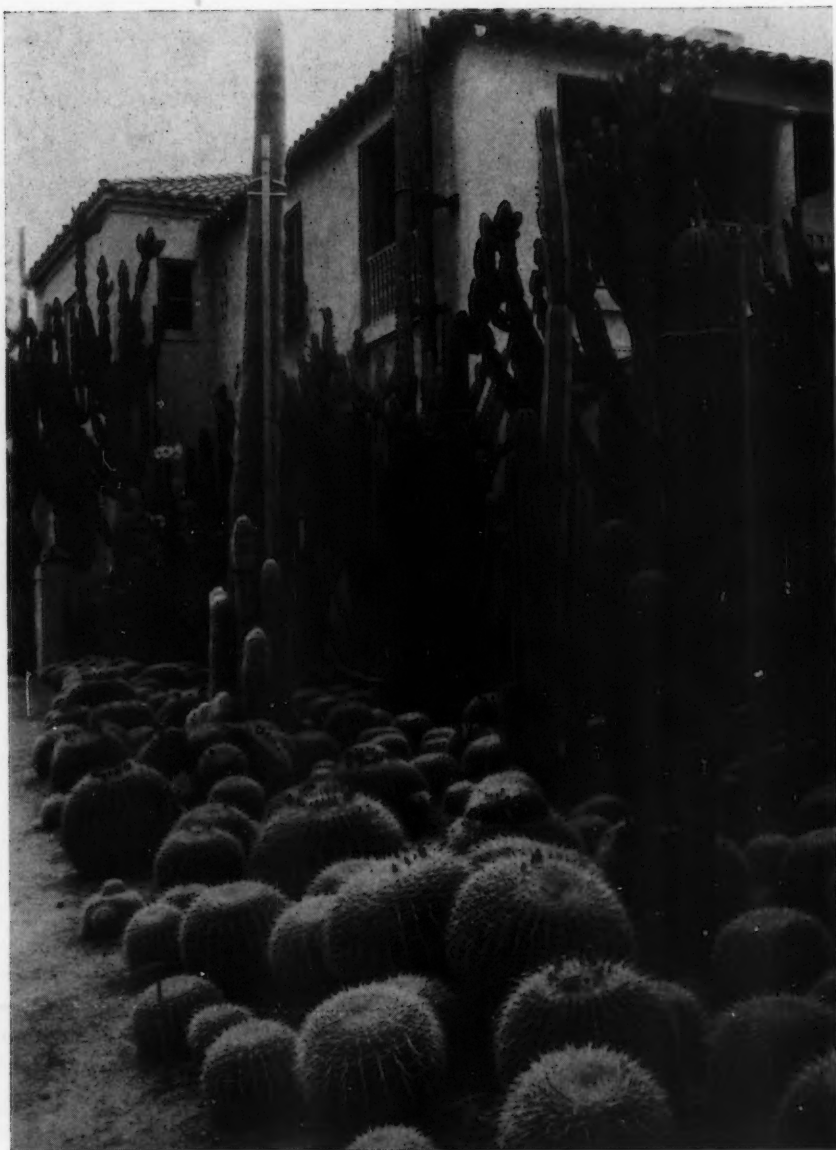


FIG. 129

Mass plantings of specimen cacti surround the residence of Mme. Ganna Walska. Flowering Golden Barrels (*Echinocactus grusonii*) are in the foreground. The tall plants from right to left are *Carnegiea gigantea*, *Lemaireocereus marginatus* (at the corner of the house is another specimen 40 feet tall), the tall plant on the left with the four smaller ones at its base is *Cephalocereus senilis*; the large one is 25 feet high. The two branching plants at the right and left with a *Cereus* in the center are *Euphorbias*.



FIG. 130

Hanging in the Live Oak trees are many flowering specimens of the Burro's Tail (*Sedum morganianum*). The ground planting mainly consists of Aeoniums, Gasterias and Gastroleas.



FIG. 131

A dense thicket of *Kalanchoe beharensis* with velvety, gray leaves, flowers freely in this frostless location. The oldest plant at the rear of this group, and which is in flower, is about 10 feet tall and the trunk has a diameter of 12 in. at the ground. This *Kalanchoe* seems to grow remarkably well here and is much used in this locality as an accent plant. Huge Dragon Trees (*Dracaena draco*) are seen in the center background.



FIG. 132

In the mossy, jungle garden, Epiphyllums are at home and flower freely creating a gorgeous spectacle.



FIG. 133

Some young plants of the Dragon Tree (*Dracaena draco*) of the Canary Islands. These were about 10-12 ft. tall. It was impossible to obtain a good photograph of some of the very large specimens.



FIG. 134—An unusually fine mass of the variegated Century Plant (*Agave americana* var. *marginata*) is bold and colorful in its greens and yellows. Even though the large specimens die after flowering they are replaced by dozens of new plants from the base.



FIG. 135

Succulents may be combined with other plants, trees and grasses for unusual effects, and this has been done in what may be called the "blue-gray" garden. The entrance to this garden is shown above and it is like walking into a fairyland, the breath-taking color harmony of it can almost be felt. Plants in gray-greens, blue-grays, silver-grays to almost white have been combined most effectively by Santa Barbara's master landscape architect, Ralph Stevens. The larger trees are Colorado Blue Spruce (*Picea pungens* var. *glauca*), Blue Atlas Cedar (*Cedrus atlantica* var. *glauca*), Silver Trees (*Leucadendron argenteum*) of South Africa. The Mexican Blue Fan Palm (*Erythea armata*) is also seen. The heavily trunked palm in the center is the Chilean Wine Palm (*Jubaea spectabilis*). Large specimens of the blue Agave, *Agave franzosinii* are used on the outskirts. The main ground planting consists of the grass, Blue Fescue (*Festuca glauca*), and throughout this are plantings of white Dudleyas, *Sedum treleasei*, gray leaved cotyledons, and blue leaved Kleinias. The silvery-gray *Santolina chamaecyparissus* was also seen. It would be interesting to compile a list of the succulents that would harmonize in this color scheme.



FIG. 136

Close-up of a group within the "Blue-gray Garden." The powdery white *Dudleya brittonii* with Sedums at the base amidst the clumps of *Festuca glauca*. To the rear of the palms is a large mass of *Kleinia repens* like a sea of blue.



FIG. 137

Pots may be interesting whether wicker, ironcastings, imported marble, glazed or decorated clay pots.



FIG. 138

Aeoniums planted in a brass kettle attract attention to their purplish rosettes.



FIG. 139

A huge "strawberry jar", as tall as a person, ornaments the deck of the swimming pool. *Agave attenuata* and *Echeveria glauca* make a pleasing contrast in form and harmony in color.



FIG. 140

Cotyledon barbeyi is planted in the side wall pockets while the top is a planter containing many fine plants of the plush leaved *Kleinia tomentosa*.

FIG. 141

This cluster of *Echeveria* was three feet across in a shallow, black bowl.





FIG. 142. Large potted specimens of *Crassula arborescens* with red edged leaves make interesting groupings.

FROM CHICAGO SOCIETY

It is most fitting that we thank the El Paso Cactus and Rock Club for their fine Convention and all their hard work. The speakers and pictures were outstanding and the lovely prizes at every meeting were a thrill. We are grateful to the Del Camino Motel and to Mrs. Eleanor Brower for the flower arrangements. Field trips were most enjoyable. We extend an extra thanks to Pres. Rush and Mr. Leasure. We will see you in Berkeley in 1957.

MARGARET RADDEN

YOUNGEST MEMBER?

Miss Susan Talbot of 3907 3rd St. NW, Albuquerque, New Mexico, is only ten years old and has collected over 100 plants within the last two months. She spends most of her allowance on her growing collection.

THE BARADS

Ed. Note: The many friends of the Barads will be glad to know that their family has been increased to five since Bea was crowned Queen at the convention in Phoenix. Although Dr. Barad is busier than ever he has renewed his interest in cacti as a hobby. Quoting from his recent letter:

"Last summer we kept our cacti in flower boxes on the open porch but as winter approached we had to

find a suitable place for them. There were not enough window sills to house the many plants. In our upstairs apartment there was a set-back window in the roof so I decided to convert this into a glass house. The area was covered with a large glass plate and the windows were opened wide from the bottom to allow heating from the room. The area faces east and has sun until 1:30 p.m. The lowest temperature was about 40 degrees and of course much warmer during the day. The cacti expressed their approval with more buds and flowers than usual. *Mammillaria bocasana* and *M. bahniiana* have flowered and there were 25 flowers on *Rebutia minuscula*. Of 80 flowering size cacti only about 15 have not shown buds. We keep in touch with Dr. Alexander of the N. Y. Botanical Garden and a nearby friend, Louis Cohen, has the largest collection that we have seen in these parts. He has several hundred cacti, many of them large, mature plants. A number of them are three to five feet tall. He keeps his plants outside during the frost-free months and in the cellar for the winter. He holds down etiolation by using a number of fluorescent lights over the plants and keeping the water to a minimum during the winter. We might form a local club. If there are others in the locality who are interested please contact Dr. G. S. Barad, 218 Beaumont St., Brooklyn 35, New York.

ROUND ROBINS

I am sure we all felt regret when these Round Robin reports, done so ably by Mrs. Fay, came to an abrupt end several years ago. It seemed unfortunate to me to have as fine a program, as the Robins are, cease to function as a unit after she resigned, and I hoped that someone qualified for this work might take up where she left off. But no one did. So, because I enjoy the Robins so much I shall try to keep them in operation to the best of my ability.

One of the greatest difficulties has been the fact that by the time I ventured to inquire for the Robin records all of them had been destroyed. So, starting out with the two I knew, I have made a beginning through other Robin members who were both prompt and generous with their replies. My gratitude and thanks go out to them for their support. It has not been possible to find and record all the Robins at this time, but I hope to have most of them eventually, and if errors creep in I shall be grateful for being corrected. Here is the state of the Robins as they are today.

Out of the eighteen, or possibly more, original Round Robins nine have been fully recorded. Of these there are seven actively flying, each with a full membership of seven or more, although some travel rather slowly over a period of months for one round. These are: The Cactus and Succulent Robins No. 1, No. 3, No. 6 and No. 7 (for men only); International Robin No. 1; Euphorbia Robin No. 1; and Succulents Only Robin. The other two Robins, Mammillaria and Rain Forest Plants No. 1, no longer fly, which seems regrettable since they both included New Zealand members. I hope we may have other Robins of these again.

Four more Robins have partial listing: Cactus and Succulent Robins No. 2; No. 4; and No. 5; and Dish Gardens (Desert Dish Gardens). May I hear from the Directors of these. The remainder of the Robins have no clues at all except they are the: Rain Forest Plants No. 2; Amateur Exhibitors; Let's Exhibit; Echeveria and Haworthia Robins. There may be others. Let me know about these if anyone has the information as every bit helps.

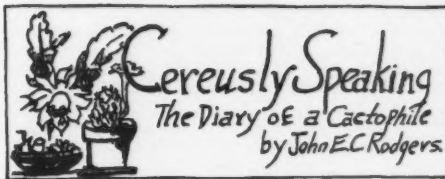
In closing I should like to report in regard to present activities that several new members have joined Robins needing additional members and that there is a waiting list for a Cactus and Succulent Robin which will fly as soon as I have a few more people to add to it. If you were on an old Robin that no longer flies or are a brand new member, I shall be very pleased to enroll you. I should like to hear from other New Englanders too as we have only four members from this area.

To those who have never joined a Round Robin let me extend a cordial invitation. Robins are fun—a bit of work too, if you are to get the most out of your letters. But all good things are worth the effort. Don't you think so? All it takes is a little time to write a letter and the postage for the Robin. I hope you will write me soon and tell me what Robin you prefer, for whether you collect generally or specialize, the Robin is a treasure in friendship and a reviver of flagging interests wherever you are. Do write and I shall try to place you soon.

MRS. GLADYS H. PANIS,
P. O. Box 705, Falmouth, Mass.

Would like to correspond with members in the Midwest and Southwest. Roy Vail, 1110 Berry Lane, Richmond, Ind.

We regret to announce the sudden death of Anthony Barone of Detroit, Mich., on Aug. 14.



Last August our family went to Washington, D.C., for a week. I went to see the sights and cactus, if any. I made notes of what I saw about cactus and succulents. Through the states of Pennsylvania, West Virginia, Maryland and Virginia I looked for such plants. I frequently saw fine specimens of *Zygocactus truncatus*, Christmas Cactus, *Epiphyllum ackermannii* and *E. Deutsche Kaiserine* in tubs and pots on porches and in yards. The window gardens looked about the same as ours but a few times I saw tall unbranched *Cereus peruvianus*, *Opuntia braziliensis* and *O. monacantha* much branched and in bloom sitting outside of private greenhouses for the summer. Often there was no greenhouse near by and I thought what a labor of love it was to move these plants in and out of living room or basement each season.

In the Smithsonian Institution in the southeast room off the main textile room I saw a glazed chintz cactus applique on a quilt. The quilt was made in Washington, D.C., in 1837-1838 by Mrs. James Lusby and was given by her granddaughter Mrs. Adelaide Dorothy Rado to the Smithsonian T. 10347. It contained a central basket surrounded by small sprays of heather. Towards the edge there were 6 identical *Heliconia speciosa* slightly stylized groupings in color to form an oblong; two above, two at either end and two below the center. Our JOURNAL for July-August, 1953, No. 4, pg. 110 and 111 shows a similar arrangement of a *Selenicereus* in a reproduction of a Blanc and Company catalogue. Until I read G. D. Rowley's "The Catalogues of Blanc and Co" I assumed the print was patterned after one in a Blanc Catalogue but Mr. Rowley reports that there were none earlier than 1890-1900.

Did Blanc get all their wood cuts or steel engravings from the same source as the chintz manufacturer or artist got his? Were there earlier catalogues put out by European growers previous to 1837? I have not been able to find any pictures which are based on drawings this early in any book I own.

In the Natural History Museum there were several mummified *Echinocereus chloranthus* or *E. rigidissimus* as part of the diorama of the Texas armadillo group. At the Botanical Garden later as well as the Smithsonian I enquired about the "Doctor Rose Collection" of cacti which Dr. A. D. Houghton in his "Cactus Book," page 97, published by McMillan Company in 1930, states was closed to study because of loss of or deterioration of labels at the Smithsonian Institution. There was no one that I could find that had ever heard of the collection and doubted that it existed as such in Washington at the time I enquired. There was a 15 foot multiple stemmed *Pereskia bleo* in full bloom in the Botanical Garden but it was there only a few years and the donor was not Dr. Rose.

At the Botanical Garden I saw two rooms of cactus and succulents which I reached by going through the Palm Court and then turned left. Raised beds with naturalistic plantings were on either side of the path which contained Euphorbias, Pedilanthus, columnar Cacti, Agaves, Gasterias, Aloes, Bryophyllums, Kalanchoes, etc. In the square room in the southeast

corner many large Agaves were housed with the large *Pereskia bleo*, *Epiphyllum oxypetalum*, *Nyctocereus serpentinus*, *Hylocereus undatus*, *Cereus* varieties and a collection of small potted cacti sunk in the ground in the more open areas. Some were in bloom or had been in bloom during the week. Continuing on to the left were the Bromeliads. A collection of exotic charm and color. A variegated pineapple beside a fruited natural variety was of particular interest.

Tucked away among other tropical vegetation or setting in shaded spots in the open court were a few Epiphyllums which looked in good health although still showing their cutting origin.

An eight foot branching *Cissus quadrangularis* containing yards and yards of twining branches made me stand in awe. I think Mrs. Elizabeth Eckstein of Denver, Colorado, will remember my delight at seeing her two small but well grown plants of this in her greenhouse in 1951. I have struggled to maintain the status quo of mine and then to see this giant. Yes sir, Cactus Liz, Denver educated me.

The orchid house across the street, although not at all imposing, contained a fine collection. There were pods on the Vanilla plant as well as flowers and at least 50 species of epiphytic as well as terrestrial orchids from far flung places in bloom. There were no Epiphyllums, Rhipsalis, or other epiphytic cacti there but I did look at the orchids and humbly pray that you will forgive me for my dereliction of duty.

There is an orchid show at the Botanical Garden in the exhibition room off the Bromeliad Room as well as a Tulip, Azalea, Chrysanthemum, etc., shows during the year! Most people knew of these shows but had not bothered to go through the door at the other end of the Bromeliad Room.

I have examined cactus literature, looked at small plants and looked at pictures of *Cephalocereus senilis* to see if it is supposed to branch from the base and I can find none that do it. Well, mine has. I have two 2½ and ¾ foot "Old Men" in a 14 inch pot. The ¾ foot one has two offsets at the base. It is a slender type three inches in diameter. The other one is four inches in diameter. The offsetting stem is naked for about six inches up the plant. One offset is 6 inches tall and the other is two inches.

The yellowed spots in the tips of the serrations on the two McDougall Epiphyllums from which I took "cucumber seed-like" eggs of some unknown insect have separated from the healthy tissue and dropped off. The tissue was split as if by a knife and the egg inserted to about half its length. I did not let any of them hatch as I do not know what manner of insect deposited the eggs. This is the first time I have found this in my collection and so far I have found no one else that has had it happen to their Epiphyllums. What is it? Is it an Ohio bug seeking

a new host or have other growers found it on their plants.

Are there some cacti and other succulent plants that mealy bugs by-pass? I believe this is true as I've found mealy bugs crawling around the edge of the pot of some plants in their search for a new host, yet this plant remains free from the pest. This "No Welcome Traveler" sign isn't the soil as far as I can see. The soil in the experimental group was all the same mixture yet wherever I moved the plant it got mealybugs while those about it stayed free of the pest. When I went deeper into the subject I found this was true with most of the members of one genera while some of the others got all the bugs. Before long I think I can finish this question satisfactorily at least to me. The mealy destroyers are night workers but not ants. I've used a flash light to see what insects clean up the mealybugs when the plants are placed outside. Are these fiends able to survive in the greenhouse, if so let's get them on our side in our greenhouses.

Did you ever sniff that crushed pill-bug? It has a delicate lilac-like odor which is not unpleasant if you remember to do so. Pill-bugs do attack young seedlings it is true but the damage that they do to healthy plants is negligible. They clean out decayed tissue back to clean tissue, eat scale insects and young thrip in and about the pots. So far I've never found the damage that others claim Pill-bugs do so until I do I'm for Pill-bugs.

I have got two seedlings of Christmas Cactus up to the 10 stem section stage. They are growing in the same pot as one of my favorite Bromeliads. They grow and thrive just as they do in the forests of Brazil or in the Botanical Gardens of the world.

One of my most decorative plants is *Aloe ciliaris* whether in bloom or not. After skipping three or four seasons it bloomed this year. Better light, more regular watering and overhead spraying no doubt turned the trick. Of course I moved it down to the three foot level from the floor while it used to be about six feet up on a shelf. No matter what it was I'm going to put it in the same spot from now on. I moved one of my shy blooming Epiphyllums from the bench where it had a bloom or two to the shelf level where the Aloe had been and it had 12 eight inch blood-red blooms. So now it'll have a new berth for next year. I try new locations for my plants if I get poor results and find that even a slight shift may be the deciding factor in its blooming time. After I find the spot where a plant is happy it goes in the same spot year after year.

If you do not see this column until the July-August issue don't blame the Editor, I'm the culprit. Here are some more thoughts, answers and what have you from—

JOHN E. C. RODGERS

1220—8th Street, Lorain, Ohio

An Introduction to Cacti

From "The Times Gardening Supplement"—England

By F. R. McQUOWN

The *Cactaceae*, usually known collectively as cacti, grown by English enthusiasts are mainly desert species. The naming of them has now been greatly clarified, but to help beginners I shall give the "catalogue" names in parentheses after the correct name.

The desert kinds, unused to vegetable matter in the soil, are best grown in a mixture of one part loam, one part sharp sand, and one part crushed brick. Lime is essential, and although mortar rubble is often recommended, cement mortars have long been used in building and

are unsuitable; a $3\frac{1}{2}$ in. potful of carbonate of lime to a bushel of mixture is better.

A sunny greenhouse gives the best results, but good plants can be grown in a living room window. From October to mid-March no water should reach the roots, but in a living room a very light spray of water at fortnight intervals will prevent shrivelling. Many fail to realize that much water is needed in the summer; the pot should be thoroughly soaked and then allowed to dry right out before re-watering. Dirty plants may be cleaned with a lather of pure soap applied with a shaving brush, followed by syringing with clean water.

When quite dry, desert Cacti will withstand a little frost, but it is better to remove the plants to a frostproof place. Pests are few. As the best modern pesticides may leave a film on the plants which is very harmful, the old-fashioned nicotine is probably safer. Alcohol—usually eau-de-Cologne—is used by some experts, and so devoted are some growers that they will even use whisky or gin. Though such an unorthodox insecticide gives the pests a shock from which they do not recover, the method is not for beginners.

Plants should be chosen at shows or at the nursery. Most nurserymen are reluctant to sell large or rare specimens unless they know they are going to a good home, and small plants should be tried at first. A start might be made with the popular rat-tailed cactus, *Aporocactus* (*Cereus*) *flagelliformis*, and the old-man cactus, *Cephalocereus senilis*, with his long white beard. Another desert type is the golden barrel or mother-in-law's armchair, *Echinocactus grusonii*, with beautiful and fearsome spines of gold on a background of green.

The epiphytic cacti require very different treatment from the desert kinds. There are many species, but after a brief mention of the crab or Christmas cactus, *Zygocactus* (*Epiphyllum*) *truncatus*, and its beautiful but rare form with scarlet flowers, I will pass at once to those at one time called Phyllocacti. Unfortunately, this name is invalid, *Epiphyllum* and *Nopalxochia* being now used. As *Epiphyllum* once had (and still has) wide currency as the name of the crab cactus, the confusion is extreme; and at the risk of making it worse I would point to the probability that many of the hybrids now grown are bigeneric between *Epiphyllum* and *Nopalxochia*, so that neither of these names is suitable for them. Fortunately there is an English (or rather American) name which has some currency, that is to say the Orchid Cactus, and although they do not look much like orchids I propose using this name for all plants described in the R.H.S. *Dictionary of Gardening* under *Epiphyllum*,

Nopalxochia and *Disocactus*, and all intermediate forms and hybrids.

A better plant for a living room than the Orchid Cactus would be hard to find; its gorgeous, large, and often powerfully scented blooms are produced once (and with some kinds twice) a year. All require the same treatment, but those with red, pink, magenta, flame and orange flowers often bloom best when recently repotted; the white or yellowish, scented kinds usually bloom better when slightly rootbound.

A very rich soil is required; half loam and half well-rotted stable manure, with a small handful of bonemeal and an egg-cupful of carbonate of lime to the bucket is excellent, and enough sharp sand to ensure quick drainage should be added. As with all cacti, repotting should be done in the summer.

Plenty of water is needed in the summer, and if possible the plants—after flowering—should be stood out of doors for a day or two in the shade and then in full sunshine. The pots should be stood on boards to deter earthworms, and free use of slug-bait is desirable. Any attack by leaf-eating caterpillars should be combated at once with D.D.T. powder; it is wise to use both as a precaution before leaving for one's annual holiday.

Before there is risk of autumn frosts, the plants should return to the living-room and be examined for any trace of worm-casts in the pot. Permanganate of potash at $\frac{1}{4}$ oz. to two gallons of water will bring worms to the surface within ten minutes, when they must be removed, as a worm can kill a plant. Water is reduced in the autumn, and though a winter rest of one month is sufficient in a warm room, in a cold one the plants should be dry while there is any risk of really cold weather; in frosts they should be removed from the window. Watering is begun in the spring with light overhead spraying, increasing gradually to copious watering, but the pot must become rather dry between each application. It is inadvisable to alter the situation of the plant after flower buds have formed, since this may cause them to drop off, as also may draughts.

Cuttings should be dried off for a week or so before being inserted in sandy soil in a five-inch pot in summer; water should be given sparingly till they are rooted. Small pieces will root, but may take four to five years to flower; cuttings the full length of the shoot often bloom the next year.

It is unlikely that anyone who has experienced the thrill of seeing the magnificent blooms of the Orchid Cactus slowly opening as night falls will ever cease to grow it.

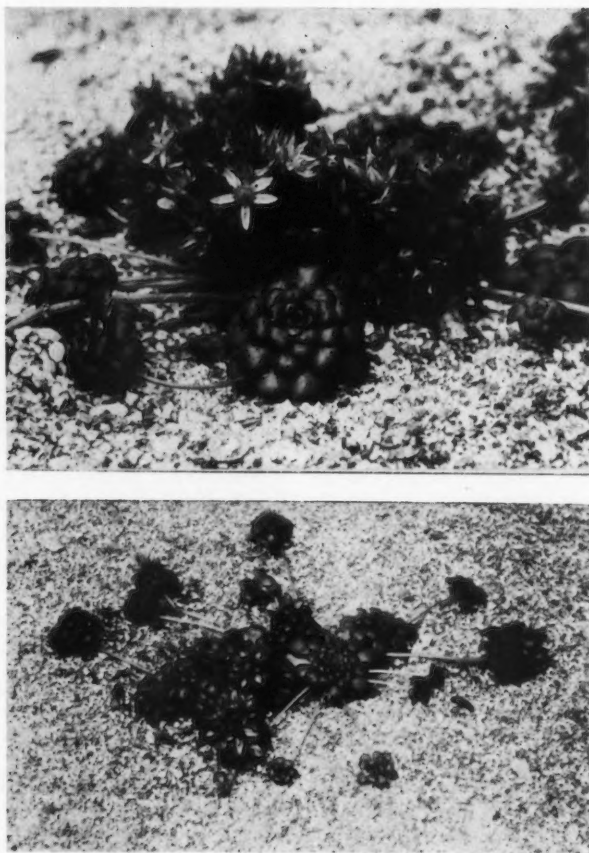


FIG. 143

ABOVE: *Sedum purdyi* Jepson, nat size.BELOW: *Sedum purdyi* Jepson, ca. x0.5

SEDUM PURDYI Jepson

J. R. BROWN

This little California *Sedum*, to which Jepson gives the name Ray *Sedum*, is described as having a flowering stem 7-10 cm. high, arising from a basal rosette, below which are produced several naked horizontal runners 2.5-5 cm. long which terminate in compact flat rosettes; leaves of the rosettes orbicular or orbicular-spatulate, 2-4 mm. long; leaves of erect stems elliptic, obtuse, recurved or sometimes ascending; cyme rather densely flowered and compact; petals white, oblong lanceolate, 4 mm. long, the opposite stamens inserted just above the base.

Localities: Etna Mills (type), Purdy. Kennett, Shasta County.

It was noted that the leaves of the bright

green rosettes were very minutely whitish papillose on the margins. Coming from the northern part of the state it is not too happy in the long protracted summers of So. California and this may account for the very short flowering stems as shown in the photograph of this *Sedum* in flower, and which only attained a height of 3-4 cm. and the cymes were very dense and compact.

The flowering period is fairly long, extending (in So. California) from April to July.

It is named after the late Carl Purdy, who was one of California's noted authorities on the native plant life, especially of the bulbous plants. A visit to his garden-nursery, it was a

combination of both, at Ukiah was always a most pleasant experience.

Since the above was written, Clausen's paper containing a much more detailed description of *Sedum purdyi* has been seen. In this paper the flowers are stated as being yellow, however, the original description by Jepson gives the color of the petals as white and the plant grown by the writer also had white petals. Quite recently some collections of this *Sedum* were seen flowering profusely in the Botanic Garden of the University of California at Berkeley and all the flowers were yellow and this would appear to be the normal color.

The very congested cyme mentioned previously, which is illustrated, is no doubt abnormal and probably was due to unsuitable conditions of culture. A more normal cyme of yellow flowers is shown. The flowering time in the natural state is April-May.

REFERENCES

- Jepson, W. L. *Flora of California* 2:100, 1936
Clausen, R. T. & Uhl, C. H. The taxonomy and cytology of the subgenus *Gormanina* of *Sedum*. *Madrone* 7:175, 1944.



FIG. 144. A normal inflorescence of *Sedum purdyi* slightly reduced.



FIG. 145. The beautiful exhibit staged by the Cactus & Succulent Society of California at the Oakland Flower Show, April 29, 1955.

BLOOMING DATES OF CACTI

My plants are kept in a glasshouse the year around at about 40°F. in winter and with shading in the summer. All are in individual clay pots and are given good attention. Little water is given from Dec. 1 to Feb. 20—in fact they are kept on the "dry side".

JEROME F. LOWENSTEIN
Cleveland Hts., Ohio

<i>Billbergia nutans</i>	Feb. 15	<i>Gymnocalycium quehlianum</i>	June 21-26
<i>Zygocactus</i>	Feb. 20-27	<i>Echinopsis huottii</i>	June 22-25
<i>Billbergia distacha?</i>	Mar. 22-31	<i>Cephalocereus palmeri</i>	June 26
<i>Stenocactus robustus?</i>	Mar. 24-27	<i>Lophophora williamsii</i>	July 3-5
<i>Mammillaria lasiocantha</i>	Mar. 27-Apr. 11	<i>Aztekium ritteri</i>	July 3-7
<i>Echinomastus madowellii</i>	Apr. 29-May 1	<i>Notocactus ottonis</i>	July 3-5
<i>Epiphyllum x Neon</i>	May 3-7	<i>Gymnocalycium friederickii?</i>	July 4-10
<i>Lophophora williamsii</i>	May 9	<i>Gymnocalycium mihanovichii</i>	July 4-11
<i>Mammillaria bocosana</i>	May 14-27	<i>Acanthocalycium violaceum</i>	July 4-5
<i>Cephalocereus palmeri</i>	May 23	<i>Cephalocereus palmeri</i>	July 7
<i>Echinomastus madowellii</i>	May 23-26	<i>Astrophytum asterias</i>	July 8
<i>Rebutia senilis</i>	May 26-29	<i>Aztekium ritteri</i>	July 10-11
<i>Gymnocalycium bodenbenderianum</i>	May 30-June 1	<i>Gymnocalycium bodenbenderianum</i>	July 11-14
<i>Echinocereus baileyi</i>	June 2-3	<i>Astrophytum asterias</i>	July 12
<i>Echinocereus triglochidiatus</i> var. <i>melanacanthus</i>	June 2-3	<i>Cephalocereus palmeri</i>	July 13
<i>Rebutia senilis</i>	June 3-6	<i>Gymnocalycium friederickii?</i>	July 14-19
<i>Gymnocalycium bodenbenderianum</i>	June 7-12	<i>Gymnocalycium schickendantzii</i>	July 15-27
<i>Notocactus scopia</i>	June 9-14	<i>Echinopsis huottii</i>	July 17
<i>Escobaria runyonii</i>	June 9-10	<i>Mammillaria melanocentra</i>	July 23-24?
<i>Lophophora williamsii</i>	June 11-12	<i>Lophophora williamsii</i>	July 24
<i>Cephalocereus palmeri</i>	June 11	<i>Aztekium ritteri</i>	July 24
<i>Neoporteria fusca</i>	June 19-21	<i>Hamatocactus septispinus</i>	July 27
<i>Gymnocalycium bodenbenderianum</i>	June 19-21	<i>Gymnocalycium damsii</i>	July 27
<i>Lophophora williamsii</i>	June 20-21	<i>Cephalocereus palmeri</i>	July 29
		<i>Gymnocalycium mihanovichii</i>	Aug. 9-14
		<i>Gymnocalycium bodenbenderianum</i>	Aug. 14-25
		<i>Aztekium ritteri</i>	Aug. 17-21
		<i>Gymnocalycium friederickii?</i>	Aug. 23-29
		<i>Mammillaria melanocentra?</i>	Sept. 5
		<i>Echinopsis eyriesii</i>	Sept. 9
		<i>Astrophytum asterias</i>	Sept. 18-20
		<i>Astrophytum capricorne</i>	Sept. 20-23
		<i>Mammillaria campotricha</i>	Oct. 2

THE CULTURE OF THE NON-HARDY SUCCULENTS

By A. G. DONALDSON

From The National Cactus and Succulent
Journal, England*

All collectors of Cacti sooner or later reach that point when the very attractive foliage or flowers of the non-hardy succulents, which are not members of the cactus family, become a temptation too hard to resist; the result is that their collections take on a more bohemian air. A further incentive is the fact that many of these plants can be utilized to enhance the beauty of the garden, for they thrive in the beds during our summer months.

Generally speaking, any plant that can be bedded out during our summer will be all the better for its sojourn in the open air; but there is one drawback and that is, given a good summer some plants will grow so vigorously that repotting will become a major problem in the autumn.

One cannot possibly quote all the varieties that can be used effectively in the garden but the beginner can make a very fine display by mixing the following in his bedding-out scheme: *Aeonium*, *Agave*, *Aloe*, *Anacampseros*, *Bryophyllum*, *Ceropegia*, *Cotyledon*, *Crasula*, *Echeveria*, *Euphorbia*, *Gasteria*, *Haworthia*, *Kalanchoe*, *Kleinia*, and the whole of the Shrubby *Mesembryanthemum* group.

If you are the possessor of a greenhouse a much more ambitious scheme is ready for your consideration. There is a wide choice of less hardy specimens which will add lustre to your cactus collection in the house. Again I can only mention a few of the more

easily grown ones, knowing full well that once you are started on the collection of these plants you will soon become an expert at finding a reason for obtaining some of the rarer species. If you make a start with the following—*Argyrodema*, *Aridaria*, *Bergeranthus*, *Conophytum*, *Corpuscularia*, *Delosperma*, *Faucaria*, *Glottiphyllum*, *Lithops*, *Pleiospilos*, *Ruschia*, etc., you cannot go far wrong, especially if you care to follow out my hints that will be found later on in this short treatise.

The home of these succulents is in the continent of Africa and in the Central States of North and South America. The majority are indigenous to the African continent and are found scattered all over that vast land, in the tropical forests, in the open valleys, on the sides of the foothills, in the arid regions of the Karroos and in the stony areas of the deserts. Small wonder then that to grow a collection of these plants successfully much thought and great care is demanded as well as an understanding of the home conditions of each plant. Only by doing this will you be able to take pride in the display your plants are making.

Now I have reached the point where I must tread warily, for I wish to suggest a new approach to the problem of cultivating these plants.

In the first place I would not recommend that you buy a mixed bag but rather that you decide on one family for your first experiment. Having decided which family most appeals to you I advise you to read up all you can about it; find out the full requirements so far as sunlight or shade, moisture or dry condition, summer and winter temperatures, and the soil constituents are concerned. This is the minimum knowledge that one needs for success. It will be apparent that

* Subscription to this excellent magazine is \$3.00 per year. Send it to 132 W. Union St., Pasadena, California.

there is a wide divergence under these four heads among the various families of the succulent group. This divergence is due to the difference in latitude, altitude, rainfall and the character of the land which forms their homes.

At the beginning do not try to be ultra scientific and pedantic by endeavouring to memorise each individual name—be content with the family name and the more important knowledge of the requirements of the plants so that there is a reasonable chance of your succeeding with your new venture.

For a beginner the whole group of these succulents can be summarily divided into three main divisions: (a) The shrubby types, (b) The semi-desert plants, (c) The flora of the arid regions.

It is in the first group that one finds the plants that can be grown out-of-doors during our summer months, say from May to September.

Naturally these plants will demand a sunny position in the garden and also a well-drained and porous soil. In the greenhouse it is as well to provide some shade from the direct rays of the sun during our hottest months.

The second group demands a slightly different approach from the first group for there is a great difference in the conditions of growth in their native environment where they have more and fiercer sunlight, less moisture and long periods of drought, and altogether much drier condition of living. For all this the plants have, throughout the ages, gradually acclimatised themselves and they will demand treatment from you simulating these conditions and at the correct

period of the year.

In the growing period they appreciate copious watering but in the 'resting' time they require drier conditions than the members of the first group, in fact they can be treated during the winter almost as if they were cacti—and, of course, you know how to treat them.

The third group—containing the plants which live in the deserts and the sun-dried lands of the Karroos of South Africa—is one where the knowledge you have gained will prove invaluable.

The 'wet' season varies according to the local climatic conditions and each minor division of this group calls for some specialized knowledge and the most meticulous treatment in accord with their needs. Some watering periods come in our winter, some in the early summer and some extend well into the autumn. Unless you know what each plant demands and are prepared to provide what it requires for its natural growth, I am afraid that you will meet with disappointment.

I hope you will not be disheartened by the foregoing because I can assure you that when you have read up the subject, bought or otherwise acquired a few easy specimens, found that after all it is easy to succeed, you will be in that happy state where you can show your successes to your friends and, what is more satisfying to yourself, be able to dip deeper into the wide world of the non-hardy succulents (other than cacti).

Now I am going to try and hold out to you all a helping hand, so that you will not turn round and say, 'Oh yes, it's all right but what a lot of reading I shall have to do.'

The following table covers the requirements of some of the better known and easy to grow succulents, and gives you a guide to the watering and wintering of these families. There are two mixtures of soil that will prove a great help.

For the 1st Group

- 2 parts decayed leaf mould.
- 2 parts good loam.
- 1 part old potting soil.
- 1 part mortar rubble broken up roughly.
- 6 parts coarse sand.

Plant	Watering Period	Winter Temp. F°
Annual Mesem.	Plant out	—
Aloe, Gasteria	" "	40°
Shrubby Mesems.	" "	40°
Echeveria ..	" "	40°
Haworthia ..	Aug. to March	50°
Kalanchoe ..	March to Nov.	50°
Argyrodema	April to Sept.	60°
Bijlia	April to Nov.	60°
Conophytum ..	July to Feb.	55°
Cheiridopsis ..	July to Nov.	55°
Dinteranthus ..	June to Sept.	55°

For 2nd and 3rd Groups

- 1 part decayed leaf mould or peat.
- 1 part good loam.
- 1 part old potting soil.
- 2 parts old mortar rubble.
- 7 parts coarse sand.

Plant	Watering Period	Winter Temp. F°
Euphorbia	.. May to Sept.	50°
Faucaria	.. Aug. to Feb.	55°
Gibbaeum	.. Varies with diff. species	60°
Hereroa	.. April to Nov.	55°
Lapidaria	.. June to Sept.	50°
Lithops	.. May to Sept.	50°
Nananthus	.. Sept. to Dec.	50°
Odontophorus	.. April to Sept.	55°
Pleiospilos	.. April to Nov.	55°
Sedum April to Nov.	45°
Stomatium	.. May to Oct.	50°
Stapelia May to Oct.	50°

N.B.—If you must keep the plants at a lower temperature than that given in the table you must see that they are kept in drier soil conditions.

OFFICERS FOR 1956

The Nominating Committee of the Cactus and Succulent Society of America have selected the following Officers and Board Members for 1956:

President—Dr. Lyman Benson
Vice-President—Don. B. Skinner

Secretary—Mrs. Mary Glade
Treasurer—Mrs. Ethel Rush
Executive Board Members for a four-year term:
Dr. Elzada U. Clover
Jack Whitehead
Harry Johnson Jr.

Each member will receive a ballot which you should return to the Secretary by Dec. 15, 1955.



FIG. 146. *Ferocactus gatesii* n. sp. at the type locality. The small *Mammillaria insularis* grows among the loose granite rocks among the barrel cacti.

Ferocactus gatesii - A New Species

By GEORGE LINDSAY

In early May, 1935, Mr. Howard E. Gates made a trip by dugout canoe from Los Angeles Bay, Lower California, to Angel de la Guardia Island in the Gulf of California. On May 11 he landed on a small islet, the easternmost of the Smith Island group, and there discovered an interesting *Mammillaria* and *Ferocactus*. Living material of both plants was collected, and the *Mammillaria* was described as *M. insularis* in 1938 (Cact. and Succ. Journ. 10; 25.)

During the summer of 1936 three school companions and I amused ourselves traveling in Lower California, and unaware that Mr. Gates had made the same trip the previous year, arranged for native turtle fishermen to take us from Los Angeles Bay to Angel de la Guardia Island. I recall vividly the heat of the August day we paddled the large dugout across the many miles of the broad bay, and our decision to land on one of the islets at its mouth to wait for evening breezes before proceeding across the gulf. Scrambling ashore, we found the little *Mammillaria* in flower, as well as the *Ferocactus* which had the habit and tawny appearance of *F. acanthodes*, and we took it for that species.

In the spring of 1952, and accompanied by Dr. Reid Moran, I again had the opportunity to visit the Smith Island locality with the Sefton Foundation—Stanford University Expedition to the Gulf of California. This time the *Ferocacti* were in full bloom, with large red flowers and enormous elongated fruit which protruded above the tops of the plants. We knew these could not be of the *Ferocactus acanthodes* complex. Superficially the flowers resembled those of *Ferocactus gracilis* Gates, from the western side of Lower California, but the fruit of *F. gracilis* is very much smaller, the seeds are only about one third as large, and the plants differ in habit and armament.

I am presently studying the genus *Ferocactus*, and a comparison of the known species indicates the Smith Island plant cannot be placed in any of the existing taxa, even as a varietal form. The new species is named for Mr. Howard E. Gates, its discoverer, whose plant explorations in Lower California resulted in the discovery of many new species. Mr. Gate's numerous articles about Lower Californian plants have been an important contribution to the botanical knowledge of that peninsula.

Ferocactus gatesii, sp. nov.

Corpus simplex, globosus vel breviter cylindricus, ad 1.5 m. altum et 3 dm. diametro; costis 30-32; aculis radialibus ca. 16, radiantibus teretibus, centralibus 4 infimo curvato; floribus magnis purpurascensibusque, ad 6 cm. longis latisque; baccis maturis ad 10 cm. longis, 2.5 cm. latis; seminibus nigris, reticulatis, ad 2.5 mm. longis, 1.75 mm. latis.

STEM simple, globular to sub-columnar, to 1.5 m. tall and 3 dm. in diameter. RIBS 30-32, acute, tuberculate, to 2.5 cm. deep. AREOLES oval, 1 to 1.5 cm. long, bearing light brown tomentum in youth. SPINES pink, yellow or horn colored, ageing to gray; central spines usually 4, erect spreading, flattened laterally, annulate, cruciform in arrangement, to 7 cm. long and 3 mm. wide, the lower the longest and sometimes curved at the tip, but not hooked; radial spines about 16, radiating, the two or three nearest the top and nearest the bottom of the areole heavier, annulate, while the lateral ones are often thinner, twisted and bristle-like; short, blunt nectareous gland-spines produced in flowering areoles, these persisting and drying to spine-like organs in older areoles. FLOWERS large, red, funnelliform, to 6 cm. long and as broad, produced in circle around apex of plant, in some cases 2 or more areoles on same rib producing flowers simultaneously; short, broad scales of the ovary maroon with yellow, ciliate margins, intergrading with outer perianth segments, these to 2 cm. long and 1 cm. wide, obtuse; inner perianth segments variable, red with

yellow margins, to 3 cm. long and 1 cm. broad, the tip obtuse to acuminate or apiculate, the innermost series of perianth segments more narrow, oblong-lanceolate with undulate-cuspidate, ciliate or slightly lacerate margins and apiculate-attenuate tips; stamens very numerous, filaments fine, red, 5 to 15 mm. long, anthers large, yellow, to 2 mm. long and 0.7 mm. wide; style yellow, 2 cm. long and 2.5 mm. wide, the upper 1 cm. divided into about 16 yellow stigma lobes. FRUIT very large and elongate, the ovary to 7.5 cm. long and 2.5 cm. wide, including the persistent withered perianth to 10 cm. long and extending well above the top of the plant. SEEDS large, black, to 2.5 mm. long and 1.75 mm. wide, with fine polygonal sculpturing and small hilum.

TYPE LOCALITY: Small islet in Smith Island group at the north side of the entrance of Los Angeles Bay, Lower California, Mexico, $28^{\circ} 59\frac{1}{2}'$ N, $113^{\circ} 32\frac{1}{2}'$ W.

DISTRIBUTION: Known only from islands and islets in the mouth of Los Angeles Bay, Lower California, Mexico.

TYPE SPECIMEN: Moran no. 4103, May 10, 1952, deposited in the Dudley Herbarium at Stanford University. Isotypes have been deposited at the Herbario del Instituto de Biología de la U. N. A. M., at the Herbarium of the University of California at Berkeley, and the Herbarium of the San Diego Natural History Museum.

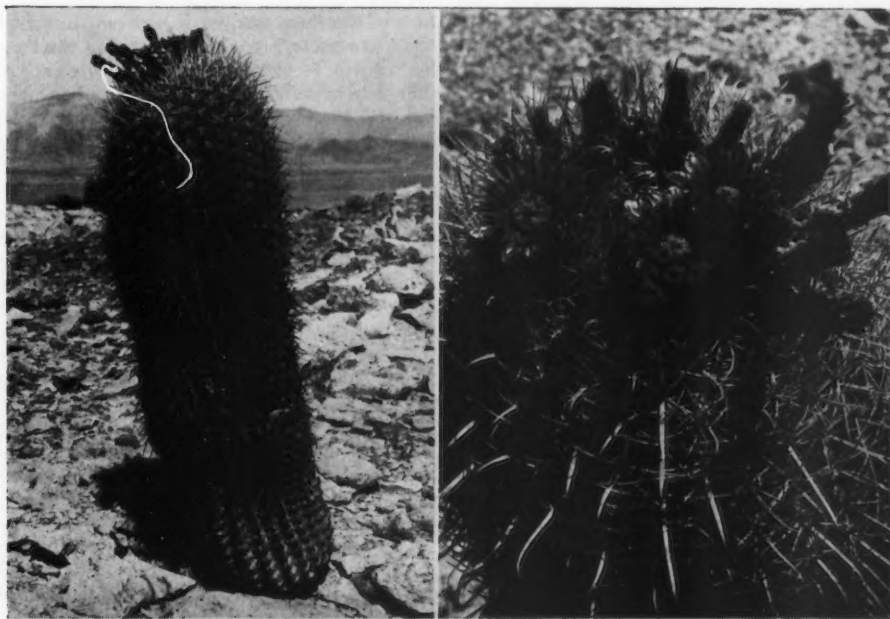


FIG. 147. Large specimen of *Ferocactus gatesii* n. sp. Lindsay; this is the plant from which the holotype specimen was made (note the fruit). Flowers and fruit are shown at the right.

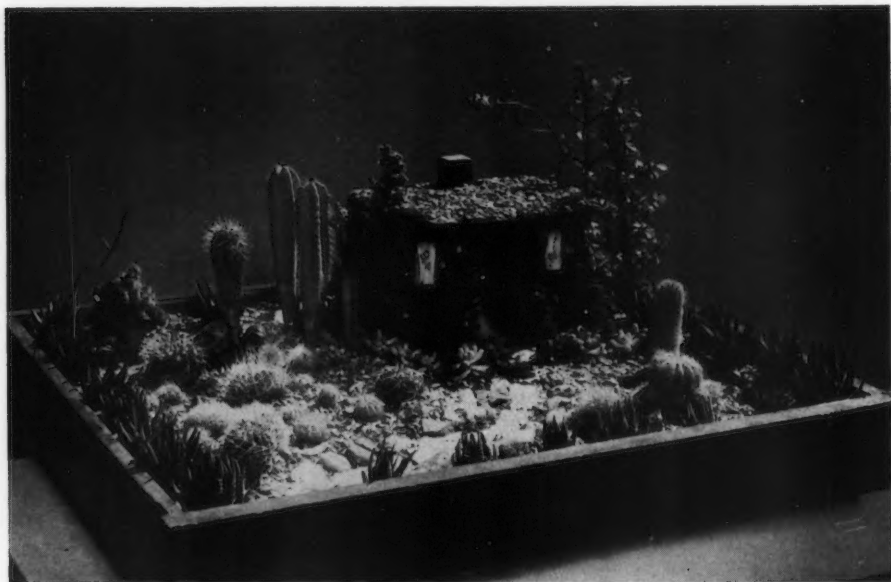


FIG. 148. Miniature desert garden by Mrs. Lois Campbell. Photo by Millard Ball.

Miniature Gardens

Interest in Cacti and Succulents is mounting along with the practice of "arrangements" with very diverse materials. Too many collections are planted in individual pots, which is not altogether a happy idea since it involves special watering and drainage problems and as plants are really gregarious they are happier together than in isolation.

At the big summer Flower Show here in Santa Barbara, there were classes devoted to arrangements of Cacti and Succulents, with one section for Miniature Gardens "less than three feet square". The first prize in this section was won by Mrs. Lois Campbell and represents a desert garden. She built a house out of two cigar boxes stuck together, with a picture of a room pasted onto the inner wall. She covered the boxes with a greenish modelling clay and pressed into that bits of gravel. The chimney is a square cut out of the clay. She bored drainage holes through the boards at the bottom of the wooden box in which the garden was made, covering them with cloth so dirt would not fall through, and then made the base of the planting out of a good inch of well-drained loam, covered it with half an inch of coarse sand and when the planting was complete, topped it with a gravel mulch. For a border to look like a fence of century plants (*Agaves*) Mrs. Campbell used *Haworthias* of the *margaritifera* and *fasciata* species (the bloom of one of them is at

the right rear of the house); she used *Elephants' Delight* (*Portulacaria afra*) for trees at the right, and *Cereus* seedlings to give height at the left, and put in a *Tephrocactus* which at the time of the show was bearing blooms like small roses to represent a climbing rose on the front left corner. Next she made a winding path of thin slabs of mica schist, and finished her planting with a pair of dwarf *Euphorbias* at the front door, some bits of *Sedum pachyphyllum* about the entrance and the rest with seedling *Mammillarias* and kindred material.

Last year Mrs. Campbell made the winning garden in a planter of hollowed-out driftwood which came through the year in such shape that it needed only a few replacements to be a show piece again. With that record and the construction and material used in this garden, it seems reasonable to assume that we have here an arrangement which will be in prime condition through at least one year. The problem of exposure and watering is simplified as the succulents will indicate at once whether there is too little water or too much, and the plants will all grow happily together and give their flowers in due season.

Dish gardens have greater length of life than cut flowers at not much increase in cost,—much depends on the owner and his sense of what the plants need. All succulent plants are constructed by nature to withstand drought, and most of

them love full sunshine. If they are put in a corner of the room which is dark and not too well aired they will show at once how they suffer by becoming pale and lengthening entirely out of their characteristic shapes, but even then they will live a long time. I had one dishgarden come back for refurbishing after nine years on a sunny ledge, and it was still full of material which could be used. On the other hand, dishes planted with equal care come back in a couple of months, with the plants so weak they are fit only for the trash can. Nevertheless, these experiments are well worth while because they are not difficult to do and it is fun learning to combine the various shapes, colors and textures with which these plants are so wonderfully equipped.

MRS. E. O. ORPET



QUESTIONS and ANSWERS

Conducted by
HARRY JOHNSON
Paramount, Calif.

Question: What would be the most desirable stock on which to graft a *Huernia levyi* crest?

Answer: Several stocks are suitable. *Stapelia gigantea* is often the most available. It is of sufficient size, has a vigorous root system and is long-lived as a stock. It is also congenial to most Stapeliads. Others are *S. desmetiana*, *S. nobilis*, *S. flaviostris*. Another choice is *Ceropegia woodii* and *C. barkleyi* tubers. These tubers when 3 to 4 years old are often quite large. In grafting, slice a corner off the tops, then cut the scion and hold it in place with gentle pressure from a loose rubber-band. In grafting Stapelias, both the scion and the stock should be cut at right angles to the length and immediately put together. I have had good success this way even without binding the two together. The somewhat sticky sap holds them together nicely.

Question: In your Euphorbia culture pamphlet, the plants are divided into 12 groups. Would it follow that in grafting one should use a stock of the same group?—Rose B. White, Calif.

Answer: In some sections this might be true. I am thinking of the Tuberous rooted ones particularly. However I have no data on this. Those I have grafted did very well on *E. submammillaris*, the common Corn Cob Euphorbia. It has a good root system and has survived many years as a stock. They are not the easiest plants to get to unite due, probably, to the great amount of latex the cut surfaces exude. If the cut surfaces

were immediately immersed in boiled or sterile distilled water for a minute or so until they quit bleeding, they might unite more readily.

Question: Near Ponce, Puerto Rico, the natives had small hedges of a sort of cactus which blossomed in the spring with small, red, poinsettia-like flowers on the tip of every shoot. It grew 40 inches, branched but not wide spreading. Smooth segments, a bit rattail-like not larger than a lead pencil. I will always wonder what it is.—Nancy E. Hineman, Kansas.

Answers The plant is probably *Pedilanthus tithymaloides*, the Red Bird Flower. It is native to the West Indies and planted throughout the American tropics. It belongs to the Euphorbiaceae and there are about 30 species in the genus. Some of the Mexican species are very pretty. *P. aphyllus* especially so, forming a thick broom of slender leafless, gray stems tipped with scarlet, hooded, odd flowers. *P. macrocarpus* from Baja, California is well worth growing with its silvery white, finger-thick stems up to 3 ft. or so tall, tipped with their curious bright red flowers. *P. tithymaloides* has two variegated leaved forms that are quite attractive as foliage plants, the leaves being green, margined with white or cream.

FROM THE PRESIDENT'S DESK

Since I have last talked to you, your Society and its officers and members have completed a very successful and entertaining Convention in El Paso, Texas at which you also should have been in attendance. By not attending you have missed not only the excellent programs but also the very hearty good fellowship and sociability of a fine group of people interested in the same hobby as yourself.

The Convention of 1955 is now history and we must now commence to plan for the one to be held in 1957 at Berkeley, Calif., and we hope that a great many of you members who have never attended a Convention will make your plans early to be present and partake of the fun and good-fellowship which are more and more becoming a dominant feature of our Conventions.

Now for a mention of other things of interest to you. It is again getting close to the time to elect your officers and Executive Board members for 1956, so when your ballot reaches you, please take the time to mark your ballot and mail it back to the Secretary before the deadline, thus fulfilling one of your best methods of building the kind of a Society you would like.

The Librarian is soon to be adding more books to the list of those which may be borrowed by members of the Society and soon as it becomes possible, more will be added to the list.

As always the Society is happy and anxious to receive new members and you as members, are our best source of new memberships. Your friends, your neighbors and even persons visiting your collection are prospective members, so talk to them, call the Society to their attention, then send their names and addresses along with their \$3.00 for membership to Ethel Rush, Secretary, 820 W. 115th St., Los Angeles 44, Calif.

HOMER G. RUSH, President

HARDY CACTI

Here is a list of hardy or "Snow Cacti" that I planted last year. I might have had more but I made the mistake of covering them with straw. The straw held the moisture and caused ice to form around the plants which rotted them. Pine branches are best to use to cover the cacti. The following failed to survive: *Echinoceros triglobidiatus*, *Hamatocactus*, *hamatocanthus*, *Echinopsis mirabilis*, *E. calochlora*, *Epithelantha micromeris*, *Opuntia leucotricha*, *Lobivia allegraiana*, *L. pentlandii*, *L. bertrichiana*.

These are the ones that lived: *Echinoceros viridiflorus* (flowered), *E. bonkerae*, *E. engelmannii*, *Neobessya missouriensis* (2 flowers), *Opuntia basilaris*, *O. polyacantha*, *O. imbricata*, *O. pollardii*, *O. grandiflora*, *O. fragilis* hybrid (called *O. smithwickii* by Claude A. Barr, Smithwick, So. Dakota), *Coryphantha vivipara* (in flower). Most of the *Opuntias* have flowered. I received the following from Edwin Wiegand of San Bernardino, California. He says they will stand well below zero weather: *Opuntia* with small joints is not *O. fragilis* but may be a form of *O. macrorhiza*, *O. polyacantha*, *O. erinacea*, *O. compressa* var. *humifusa*?, *O. whipplei*.

I am getting some more hardy cacti from Mrs. Nancy A. Duck, Rt. 1, Grand Junction, Colorado: *Pediocactus simpsonii*, *Sclerocactus whipplei*, *Echinocereus coccineus*, *Coloradoa mesae-verdae*. Mrs. Duck says that these will stand 30 degrees below zero.

Canadian Hardy Cacti

Opuntia fragilis, Southern Saskatchewan and Alberta. *O. humifusa* formerly *O. rafinesqueii* Point Pelee, Ontario. *O. polyacantha* southern Manitoba to

Alberta and dry valleys of British Columbia. *Coryphantha vivipara* occurs on the southern slopes of River Valleys of the Peace and North Saskatchewan Rivers in north central Alberta only. *Neobessya missouriensis* (classified by Rydberg as *Neomammillaria missouriensis*) occurs only in the Prov. of Manitoba which will likely be its northern limits. Further information on these species may be had by consulting Rydberg's "Flora of the Prairies and Plains of North-central North America".

The Dept. of Agriculture of Manitoba says, "*Mammillaria vivipara* is a cushion-like cactus from 1 to 3 in. high and from 1 to 8 in. across, covered with somewhat cone-shaped tubercles each bearing a cluster of from 3 to 8 reddish brown spines $\frac{1}{2}$ to $\frac{3}{4}$ in. long. The flowers are borne between the tubercles and are from $1\frac{1}{2}$ to 2 in. across with numerous purple, narrow petals. Fruit is pale green, fleshy and turning brown with age and very sweet and edible when ripe. This is fairly common in the eastern Saskatchewan area and in the sand hills of Stockton.

The Dept. of Agriculture at Ottawa, Ont., says that there is no *Neobessya* in Canada so this plant must go under different names in different Provinces.

There is another cactus in Alberta called "The Money Cactus" and has heads the size of silver dollars, silver-gray in color and lies flat to the ground.

Wm. Richardson

2436 Murray St., Niagara Falls

Ontario, Canada

Ed. Note: Plant names are the author's.

Notes on *Haworthias*

By J. R. BROWN

Haworthia gracilis Poelln. in Repert. Sp. Nov. XXVII (1929) 133, XLI (1937) 201, XLIV (1938) 223; in Desert Plt. Life IX (1937) 90, fig.

Plant stemless, simple, 6-7 cm. diameter.

Leaves erect-spreading, somewhat glaucous green, somewhat shining, narrowly obovate-oblong to narrowly oblong, long acuminate, ca. 3.5-4 cm. long, ca. 8-9 mm. broad, terminating in a 6-9 mm. long, pellucid, straight or flexuose, smooth or sometimes minutely ciliated hair-like bristle; pellucid on both leaf surfaces toward the tip; face of leaf lightly convex, and with 3 (—5) greenish lengthwise lines, the median line alone reaching the tip; back of leaf convex and keeled towards the tip, rarely with 2 keels, with 5-7 lengthwise lines, 3 reaching the tip; margins and keel with white, straight or flexuose, cilia-like teeth, ca. 2 mm. long.

Peduncle simple, slender, 25 cm. or more in length, includ. raceme, ca. 2 mm. diam., pale brownish-green and more or less shining. Sterile bracts several (7-11), lowermost 6-9 mm. long,

deltoid-lanceolate, acuminate, with a narrow pale green to pale brown keel, uppermost ca. 5 mm. long, deltoid-acuminate, with a narrow pale brown keel. Pedicels ca. 2 mm. long, green; bracts 5-6 mm. long, similar to upper sterile bracts. Perianth 14-16 mm. long; tube obclavate, subtrigonus, ca. 4 mm. diam. at broadest part, white with green or pale brownish-green lines; segments white, recurving, faintly tinged rose in upper part, mid-upper segment more erect, mid-lower segment very recurved, segments with green or brownish-green lines.

When von Poellnitz described this *Haworthia* (sect. *Araneae* Berger) he gave several localities, but eventually seemed doubtful of all of them and so no definite locality is given. The plant illustrated here came to me from F. R. Long about 20 years ago under the name *Haworthia gracilis* ex Hankey. This plant agrees with von Poellnitz's description in every detail. This *Haworthia* was named without the flowers being known. The details of the flowers which are given here have been taken from the plant illustrated.

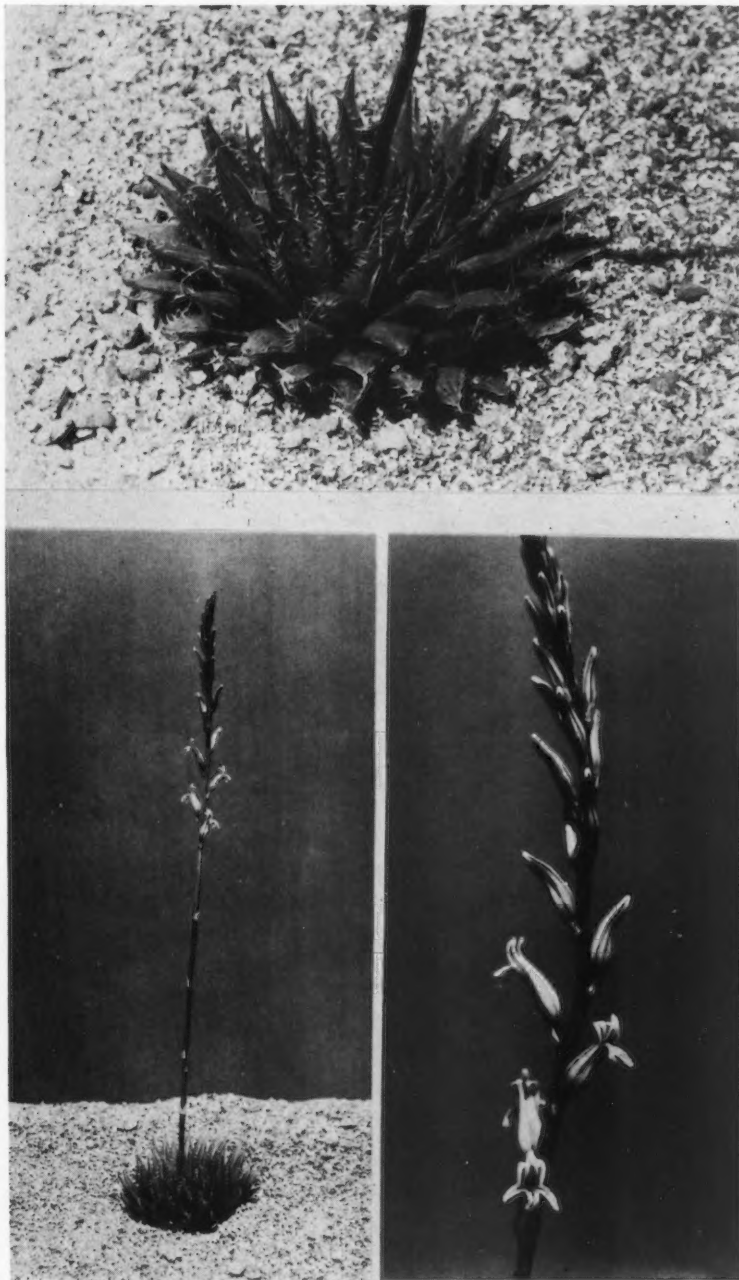


FIG. 149. Top: *Haworthia gracilis* Poelln. Lower left: Plant in flower, approx. x0.3. Lower right: Flowers nat. size.

1955 CONVENTION

The Sixth Bi-ennial Convention of the Cactus & Succulent Society of America Inc. opened at 10:00 A.M., Friday, July 8th, 1955 in the beautiful Terrace Room of the Del Camino Coffee Shop in El Paso, Texas, with Convention Chairman John Hicks Leasure presiding.

A door prize drawing was held with several nice plants as prizes. The Convention was started on its way with an invocation given by Chaplain Colonel Henry, attached to Fort Bliss Air Force Base in El Paso. Due to the illness of Mr. W. W. Wilson, Vice-President of the El Paso Chamber of Commerce, Mr. Jennings gave the opening address of welcome after which President Rush responded welcoming everyone to the Convention. The royal greetings were given by Ex-queen Patricia Moorten as Queen Jaye and King Fred were unable to attend for this meeting.

The Afternoon session was convened at 2:00 P.M. in the New Orleans Room, with Vice-President Dr. L. Benson presiding. A door prize drawing was again a feature of the meeting. President Rush showed colored slides of the events of the 1953 Convention in Arcadia. This was followed by an excellent address by Dr. Marjory Anthony, Botany Dept. Chico State College. The subject of her address was "The Opuntiae of the Big Bend Region of Texas". Colored slides illustrated her talk and it was enjoyed by everyone.

The evening meeting was called to order in the Terrace Room at 7:30 P.M., with M/Sgt. Richard Clark, President of the El Paso Cactus & Rock Club presiding. A door prize drawing was held. The first address of the meeting was a colored slide tour of Florida and its gardens and parks by Mr. Ladislaus Cutak, Director of the Succulent Section of Shaw's Missouri Botanical Gardens, St. Louis, Mo. Following this Dr. Lyman Benson, Botany Dept. Pomona College, gave an excellent talk illustrated with herbarium sheets and colored slides, the subject being, "Geographical Distribution of West American Cacti". The meeting was then adjourned until morning.

Saturday morning at 9:00 A.M. the Convention group assembled for a tour of gardens of the members of the El Paso Cactus and Rock Club under the leadership of John H. Leasure, Convention Chairman, returning to Del Camino in time for Luncheon at 12:00 noon. Also at 9:00 A.M. Pres. Rush made their apartment available to the American Section of the I.O.S. to hold their meeting while attending the Convention.

At 2:00 P.M. the Convention was again convened with John H. Leasure presiding. A door prize drawing again produced some interesting plants. The election of the new King and Queen was held with only one nomination for each position and the nominees were elected unanimously. The new King and Queen are Mr. & Mrs. E. J. (Mickey) Kirsch, of Chicago, Ill. and proved to be an exceptionally likeable and well suited couple. Mr. Kirsch is the cactophile but Mrs. Kirsch is fast becoming a threat to the supremacy of the male in the Kirsch family. Following this a very fine illustrated address was given by Mr. Paul C. Hutchison, titled "Kodachrome Portraits of Succulents". Mr. Hutchison is Director of Succulent Plants Section of the University of California Botanical Gardens, Berkeley, Calif. The meeting was then adjourned for dinner.

At 6:00 P.M. the Fun Session was convened with Ex-Queen Patricia Moorten, Second Vice-Chairman of the Convention Committee presiding. The usual door prize drawing was held after which the Coronation Ceremonies were held followed by the initiation into the "Ancient Order of Cactus Nuts". Queen Jaye and King Fred, of the 1953 Convention in Arcadia, flew in from Los Angeles to be on hand for the Fun

Session and Coronation and had to leave again the following morning to get back to work on Monday morning. Following the completion of this, the Fashion Show was held with many persons participating in many different types of costumes emphasizing the cactus motif. Mrs. Lucie Wagner won first prize for the best costume—a copy of "Van Laren's Succulents". There were several other book prizes given to other winners.

When the Fun Session was completed, Dr. Edward F. Castetter, Biology Dept., University of New Mexico gave a very interesting address on "New Mexico Cacti" illustrated by some fine slides.

Sunday morning was free for Church or other activities for everyone except the Delegates to the Convention. The meeting with the Delegates was held in the apartment of President and Mrs. Rush, with President Rush presiding and Secretary Ethel Rush recording the minutes of the meeting. Twenty-five Delegates attended and Dr. Lyman Benson, Vice-President of the Society sat in as an observer. After quite a bit of discussion the Delegates voted to recommend to the full Convention, that Berkeley, Calif., be chosen as the site of the 1957 Convention. It was also decided that the dates should be settled for the early part of July. The Delegates also voted to recommend that the bid of St. Louis Society be retained to be acted upon at the next Convention. The Delegates then voted unanimously to recommend to the full Convention that Mr. Paul C. Hutchison be elected Chairman for the 1957 Convention. The Delegates also discussed other subjects pertinent to the meeting and made several recommendations to the Executive Board of the Society.

At 2:00 P.M. the afternoon session was convened with Pres. Rush presiding. A door prize drawing was held. The Society Secretary, Mrs. Rush, reported the recommendations of the Delegate meeting to the full Convention and President Rush asked for confirmation of the recommendations. It was moved, seconded, and carried that Berkeley be the site of the 1957 Convention. It was also moved, seconded, and passed that Mr. Hutchison should be the next Convention Chairman.

There being no further business the meeting was turned over to Mr. Hutchison who gave a fine talk, illustrated with slides, titled, "Portraits of South American Cacti", showing views and plants from his recent excursion into this area.

The Evening session was called to order with Dr. Elzada Clover presiding. The usual door prize drawing was held. Patricia and Chester Moorten then took the folks on a "Picture Tour of Mexico, The Big Cactus Country" by means of colored slides.

Monday morning the crowd assembled at 9:00 A.M. for the field trip into the Hueco Tanks; about twenty carloads made the trip. The weather was cloudy and the folks were treated to a small thunder shower about noon but everyone enjoyed the trip and many plants were collected by each one.

At 7:30 P.M. the evening session was convened and the door prize drawing held. This was followed by a splendid talk on the difficulties encountered in the National Monuments. Then a fine moving picture, by the Union Pacific R. R. of a tour of Grand Canyon, Zion, Bryce and Cedar Breaks National Parks, given by Mr. John G. Lewis, Superintendent of Saguaro National Monument, Tucson, Ariz., assisted by Mr. George Olin, also of Tucson.

Tuesday morning at 9:00 A.M. the group assembled for the field trip to Oro Grande but due to heavy rains during the night which had washed out a section of the Oro Grande Highway the trip was changed to a shorter trip into the Franklin Mts. where everyone enjoyed themselves and collected many fine plants.

The dinner for the last day of the Convention was a

typical Mexican one served at the El Rancho Cafe on the Carlsbad Highway. After the dinner was completed President Rush thanked those who had been

responsible for such a successful Convention and after a Benediction by Colonel Henry, declared the Convention closed.



FIG. 150. Group picture at the convention and the El Paso garden of Mr. and Mrs. Clark.



FIG. 151. *Thelocactus goldii*. Gates photo.

Thelocactus goldii - A New Species

By HELIA BRAVO HOLLIS

Cactaceas y Suculentas Mexicanas, Vol. 1, p. 17

Translated by Howard E. Gates

The *Thelocactus* here described, is borne on the sides of the Barranca de Metztitlan in the State of Hidalgo. This cactus zone, as is well known, is of great importance in Mexico because it is the home of a great number of species.

This plant was found by Mr. Hernando Sanchez Mejorada, who supplied me with plants for identification. It is found in relative abundance and strangely has not been described before. It is globose and produces a beautiful rosy purple flower. The season of flowering is long, extending from November until April.

The body is simple, globular, from 4 to 9 cm. in height by 5 to 9 cm. in diameter. Tubercles are arranged in 8 and 13 spirals, conical, with the base more or less hexagonal. Areoles nearly circular, with white wool when young, the groove in the upper part of the tubercle is very short and at times is lacking. Radial spines 11 or 12, at times to 15, from 15 to 20 mm. long, radiating, acicular, yellow with rosy brown tips when young, afterwards grayish white with dark tips, straight or slightly curved. Central spines 1 only, similar to the radials, straight and a little longer. Flower 2 to 2.5 cm. long, purple in color, outer perianth segments, lanceolate, abruptly acuminate, 3 mm. in width, brown in color with margins entire, clear or slightly reddish, interior segments linear 2 cm. long by 3.5

to 4 mm. wide, apex rounded with a small white point, filaments clear rosy purple, anthers orange yellow; style rose, stigma lobes 3 to 6, cream or a light rose tint, some times white. Fruit hidden within the wool of the apex, dry, 6 mm. long. Seeds black.

The name *goldii*, is in honor of Mr. Dudley Gold, a very enthusiastic student and admirer of Mexican cacti.

On May 24, 1952, your translator travelling with Dr. Yale Dawson, found this interesting plant growing on a hillside just east of the village of Metztitlan. It was growing in the company of extremely tall *Astrophytum ornatum*, great clumps of *Mammillaria geminispina*, *Coryphantha erecta*, golden *Echinocactus* and numerous other species. It immediately attracted our attention even though we could not place it in any genus. A few plants and some seeds were collected, both of which have grown readily under cultivation. Cultivated plants have a tendency to grow larger and branch much more freely than in the wild. The widely spaced and prominent tubercles give these plants a strong resemblance to some of the *Mammillarias*. The bright flowers are scattered over a long period in our winter season. The plant illustrated, is a collected plant which has been under cultivation for three years.



SPINE CHATS

LADISLAV CUTAK



Those of us who knew Tony Barone will mourn his loss. He was a conspicuous figure at the conventions and because of his stoutness was usually chosen as one of the victims in our fun sessions. The world loves a fat man. Tony always took it in a sportsmanlike manner. At the last convention we ceremoniously combed his bushy gray hair with a real cactus brush—the stiff bristled dry fruit of *Pachycereus pecten-aboriginum*. In Denver he modelled one of the cactus hats made of the pads of *Opuntia* and was picking out glochids from his ears for weeks afterward. In El Paso he was already planning a few stunts with Mrs. Raddden which would be tried in Berkeley.

Tony Barone came from Detroit where he was very active in the local cactus society. The displays which the club sponsored in the annual Michigan Spring Flower show must, to a very large measure, be credited to his untiring efforts. Several times he was elected as president of the Detroit Cactus and Succulent Society and when not presiding in the chair served in many other capacities. He was also active in the Men's Garden Club and the Michigan Horticultural Society. Mr. Barone died on August 14 and was laid to rest from Santa Maria Church in Mt. Olivet Cemetery. To his brother, Alphonso Barone, we extend our deepest sympathies.

I almost did not make the convention this year but at the last moment was able to go. The publisher of my proposed CACTUS GUIDE asked me to revise the text to suit his taste and to make additional sketches. This was completed only on the day I left for El Paso with Fred Henze and his young son. Enroute we stopped off to visit with Charlie and Mary Polaski in Oklahoma City, who have the finest and largest cactus collection in the entire state. Their greenhouse is full of interesting rarities and the front yard is tastefully landscaped with large and small succulents. The conspicuous feature is a circular bed with a giant Saguaro rearing its massive trunk heavenward.

Our next destination was Palo Duro Canyon south of Amarillo, Texas. Once before we had visited this scenic wonderland and I highly recommend it to our people who may be traveling that way. Camera enthusiasts will have a field day shooting the exciting formations located there and besides, the colors of rock strata are very impressive. The canyon is over 100 miles long and 20 miles wide in some parts. A winding road descends into the canyon offering some spectacular sights. A small stream meanders through the canyon and must be crossed several times. Back in 1949 a movie company filmed the "Sundowners" in the canyon.

Carlsbad Caverns, of course, had to be visited also. While Fred and his boy were making the underground journey I chose to explore the countryside, photographing cacti native to the region. The slopes in July are dry and mostly barren but many wildflowers grew among the rocks. Cacti in several species were seen under dry bushes. Lizards often scamper over the hot rocks at one's approach and mysteriously disappear before your very eyes.

Because of the stopovers, we missed the opening ceremonies of the 1955 convention and arrived at the Del Camino Courts late Friday afternoon. In the eve-

ning I made my scheduled talk, showing kodachromes of my winter trip to Florida, along with slides of cactus arrangements made by the Henry Shaw Cactus Society members for our annual fall shows. The Florida pictures were chosen expressly to give those in attendance a peek at the Peninsular State just in case one of our future conventions might be held there someday. Following my talk, Dr. Lyman Benson of Pomona College gave an excellent discourse on the "Geographical Distribution of West American Cacti." Many excellent lectures were on the program including those given by Paul Hutchison who showed portraits of succulents of unusual rarity cultivated at Berkeley as well as portraits of South American cacti taken on one of his exploration trips. Dr. Edward Castetter talked on New Mexico's Cacti and Chester and Patricia Moorten gave a vivid account of a trip to Old Mexico. You have to hand it to Pat—that girl is clever in anything she undertakes. She gave an interesting talk, never seeming to run out of words at any time and with a delightful sense of humor that has always been her trademark. This year she also conducted the fun session which was quite clever but I'm afraid some of the members sitting way back in the room may have missed some of the shenanigans. Too bad the room was not equipped with a stage!

Our lovely and gracious royal couple, Jaye and Fred Mayall, flew in from Burbank in time to crown the newly elected king and queen who are to reign for two years until we meet in Berkeley in 1957, the site of next international gathering. The new monarchs are Adeline and Eiten Kirsch of Chicago. Like the previous king and queen they had to drink the ceremonial toast of cactus juice and what a face the king made! May you both have a prosperous reign. All the members who wished to secure certificates in the Ancient Order of Cactus Nuts had to sample the cactus juice and some of them came up for a second drink, so it wasn't too bad!

No doubt, elsewhere in this issue, you will read full reports of the convention but before I close my column the El Paso Rock and Cactus Club must be congratulated on the way it handled the 1955 get-together. The site was excellent, the publicity ample, and our hosts very gracious. John Leasure and his committee can be proud of this achievement. If any of you readers have never attended a convention before why not plan to be with us in Berkeley in 1957?

BRITTON AND ROSE MONOGRAPH

"The Cactaceae," the only complete monograph on cacti in the English language. This set consists of four volumes, 1048 pages, 9x12", and contains 127 one-color full page reproductions from the original colored plates, 1120 additional illustrations on cacti, 7800 cactus names together with descriptions, keys, indexes, and thousands of synonyms. This is the most complete work ever published, and is considered an absolute necessity to libraries, botanists, students and collectors. The reprint edition of this well-known work is now almost exhausted and may now be classified as a rare book item. \$62.50 post-paid in U.S.A. Please add sales tax on sales in California.

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EUROPEAN BOOKS

There is an ever increasing interest in cacti and the other succulents as is evidenced by the many popular books being published in England and on the Continent. The quantities sold are fantastic yet understandable because of the closer proximity of growers who have a deeper and more general interest in growing unusual plants. The following books have been available for some time and are still in popular demand:

<i>The Cactus Grower's Guide</i> —Higgins.....	1.50
<i>Succulent Plants Illustrated</i> —Higgins.....	2.50
<i>Cultivation of Succulents</i> —Jacobsen, Trans. Higgins	1.65
<i>Cactus Growing For Beginners</i> —Higgins.....	1.00
<i>The Study of Cacti</i> —Higgins.....	2.00
<i>Neale's Pictorial Booklet</i> —Lamb.....	1.00
<i>Flowering Your Cacti</i> —Lamb.....	.90
Recent books are:	
<i>How to Grow Cacti and Succulents</i> —Shurly....	\$.25
<i>Cacti</i> —Bertrand and Guillaumin.....	3.00
<i>Grow Cacti</i> —Marsden (books in transit).....	2.25
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<i>Kakteen</i> —Hans Barschus. With 100 pgs. 67 illustrations. In German. We will place orders from Germany	1.00

MORPHOLOGY OF CACTI

By Franz Buxbaum and Edwin B. Kurtz, Jr. Part III is now available. This last section deals with the Fruit and Seeds and contains over 200 illustrations, \$2.75. Parts I and II are still available at \$3.50 each part.

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